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## **Flu, bird flu, and flu pandemics**

### *Information about bird flu for Alaskans*

- **Flu, or influenza viruses** are a group of viruses that primarily infect birds, but also can infect and cause illness in mammals, including pigs, horses, and humans. Influenza has probably existed in mammals and birds since ancient times.
  - There are three types of influenza: A, B and C. **Influenza A** has the greatest propensity to change its genetic material and is the only type that has caused human pandemics.
- **Flu epidemics** occur every year or two years when a flu virus undergoes a small genetic change, just enough that many people are susceptible to infection. Epidemics have high attack rates, sometimes up to 20 percent. Severe illness and death during annual influenza epidemics is most common among the elderly and persons with underlying medical conditions.
- **Flu pandemics** occur when there is a major change in the genetic make up of the virus. All humans are susceptible, attack rates are high, and mortality rates may be high as well. Influenza pandemics are explosive, spread rapidly, and can travel around the world in only a few months.
- **Bird flu** (Avian influenza) is a contagious disease of birds, but may occasionally cause disease in other animals, including humans. The current outbreak of the H5N1 bird flu virus, which began in 2003, is the most severe outbreak in poultry ever recorded. It is unusual in the severity of illness which it causes in humans.
  - The H5N1 bird flu virus has been extraordinarily difficult to control among poultry, even after death or destruction of 150 million domestic birds. This virus is now firmly entrenched in poultry in Indonesia, Viet Nam and some parts of Cambodia, China, Thailand, and Laos. The Republic of Korea, Japan, Malaysia, Russia, Kazakhstan and Mongolia have also reported H5N1 bird flu in poultry.
  - Deaths in wild birds from H5N1 bird flu were reported from Russia, Kazakhstan, and Mongolia in August 2005. Most recently, the H5N1 bird flu virus has been reported in poultry in Turkey, Romania, and possibly in Greece.
  - There is concern that the H5N1 bird flu virus could make its way to North America via the wild bird flyway between Asia and Alaska. Theoretically, the virus could then make its way to the rest of the United States via North American wild bird flyways and could result in a significant risk to the domestic poultry industry.

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## **Bird flu risks to people**

- **Direct bird flu infection to people from infected poultry:** This is a rare event and usually results in mild disease, but the resulting disease from the current strain of H5N1 is severe. The virus causes a severe viral pneumonia and multi-organ failure. There is a 50 percent death rate among those who are known to have become ill from bird flu. Most of the over 130 human cases have occurred in children and young adults.
  - Human infection occurs after direct contact with infected domestic poultry, or with surfaces contaminated by bird feces. The virus is shed in large numbers in bird droppings. Most human cases have occurred in rural or near urban areas, where households keep small poultry flocks that roam freely, entering homes or sharing outdoor areas where children play.
  - Exposure may also occur at the time of butchering, defeathering, and preparation of infected poultry.
  - Rarely, person-to-person transmission of H5N1 bird flu virus has occurred, associated with poultry outbreaks. It has never been spread beyond the immediate close contacts to a human case, or caused illness in the general community.
- **Symptoms** of bird flu in humans have ranged from typical flu-like symptoms (fever, cough, sore throat and muscle aches) to eye infections, pneumonia, severe respiratory diseases (such as acute respiratory distress), and other severe and life-threatening complications. The symptoms of bird flu may depend on which virus caused the infection.

## **Bird flu prevention and treatment**

- Studies suggest that the certain prescription medicines approved for human flu viruses would work in preventing bird flu infection in humans. Currently there is no widely available vaccine to protect humans against the H5N1 bird flu virus that is being seen in Asia. However, vaccine development efforts are under way. Research studies to test a vaccine to protect humans against H5N1 virus began in April 2005.
- The H5N1 bird flu virus currently infecting birds in Asia that has caused human illness and death is resistant to some antiviral medications commonly used for flu. However, two antiviral medications, oseltamavir (Tamiflu®) and zanamavir, would probably work to treat flu caused by the H5N1 virus, though studies still need to be done to prove their effectiveness.

## **How great is the risk that the H5N1 avian influenza strain will trigger a pandemic?**

The risk is real. With the H5N1 bird flu virus firmly entrenched in large parts of Asia, there are likely to be more human cases. With each additional human case, the virus has an opportunity to improve its ability to transmit among humans, and perhaps to develop into a pandemic strain. With the recent spread to poultry and wild birds in new areas, the possibility of additional human cases increases.

- The current risk to Americans from the H5N1 bird flu outbreak in Asia is low. The strain of H5N1 bird flu virus found in Asia and Europe has not been found in the United States. There have been no human cases of H5N1 bird flu in the United States. It is possible that travelers returning from affected countries in Asia could be infected if they were exposed to the virus. Since February 2004, medical and public health personnel have been watching closely to find any such cases.

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## **What is the Alaska Department of Health & Social Services, Division of Public Health doing to prepare?**

- Completed and posted the Alaska Pandemic Influenza Plan: <http://www.epi.hss.state.ak.us/id/influenza/fluinfo/pandemicfluplan.pdf> . We are in the process of receiving comments and reviewing the Plan for its next update.
- Completed and updated the Alaska Strategic National Stockpile Plan. This Plan will be used to request and receive assets of the CDC Stockpile, including flu vaccine and antiviral drugs, and to distribute to hub communities.
- Completed a mass flu immunization clinic in October 2004. This exercise demonstrated that Public Health can immunize between 500-600 people an hour. Facilitated three additional community-based influenza vaccination exercises during in Valdez, Sitka and Fairbanks in the fall of 2005.
- Tested our ability to respond to a public health emergency during the 2005 Alaska Shield/Northern Edge statewide exercise.
- Signed into law a new public health emergency bill in July 2005.
- Implemented the 2005-2006 influenza vaccine initiative.
- Completed the Emergency Public Information Plan, which is again under review.
- Distributed CDC advisories regarding flu immunizations, flu activity and avian flu.

## **Priorities for improving the Alaska Pandemic Influenza Plan:**

- Expand and improve disaster response plans.
- Assure that rural Alaskans have access to medications, vaccine and health care.
- Make decisions as to whether to purchase oseltamivir (Tamiflu®) (how much, where to store, how to use before shelf life expires, etc.)
- Integrate our state plan into the federal plan when published.
- Improve and increase public information and communication on the issue.
- Ensure that communication systems between federal, state, tribal and local agencies work during emergencies and disasters.
- Identify persons who should be prioritized for treatment with Tamiflu, assuming there will be an inadequate supply.